Sedimentary facies, grain size and sedimentary process of event deposits by large run up tsunami

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We examined sedimentary facies and grain size of sands deposited by the 1993 Hokkaido-nansei-oki. The deposits were divided into up-flow and return flow units by their sedimentary structures. Grain size analysis shows that the up-flow deposits have bimodal peaks at very coarse to coarse sand and at medium to fine sand. By contrast the return-flow deposits have a unimodal peak at medium to fine sand. These sedimentary characters are maybe common in tsunami deposits on shore area.

On the other hand, we attempted to find historical and prehistorical tsunami deposits in the lacustrine deposits of Harutori-ko Lake along the Kuril subduction zone, Hokkaido. We could recognize twenty event deposits in the verbed lacustrine clay since 9000 cal.yBP. These event deposits erode the verbed lacustrine clay and show several graded bedding from gravely sand to silt, and divided five divisions such as Tsa(pebble to granule facies), Tsb (fine to medium sand facies with bed forms), Tsc (mud clast zone), Tsd (alternation facies of fine sand and silt) and Tse (organic silt facies) similar to sediment gravity flow deposits because these deposits transported by strong turbulent flow of up flow.